# IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	)	
BURFIELD, et al.	)	
Serial Number: to be Assigned	)	Art Unit:
Filed: Concurrently	)	Examiner:
For: ORIECT-BASED NUMERIC ANALYSIS ENGINE	)	

Assistant Commissioner for Patents Washington, D.C. 20231

### ASSOCIATE POWER OF ATTORNEY

Sir:

I hereby appoint Mark Guttag, Registration Number 33,057, as my associate attorney in the above-captioned application, with full power of substitution and revocation, to prosecute this application, to make alterations and amendments therein, to receive the patent and to transact all business in the Patent Office connected therewith.

However, please continue to address all future communications to the undersigned attorney at the following:

Ajay A. Jagtiani
JAGTIANI & ASSOCIATES
Democracy Square Business Center
10379-B Democracy Lane
Fairfax, Virginia 22030

Respectfully submitted,

Registration Number 35,205

Kjay A. Jagtiani

JAGTIANI & ASSOCIATES
Democracy Square Business Center
10379-B Democracy Lane
Fairfax, Virginia 22030
(703) 591-2664

# DECLARATION FOR PATENT APPLICATION AND APPOINTMENT OF ATTORNEY

my name; I believe that I ar	n the original, first	and sole inventor (if	sidence, post office ad fonly one name is list	ed below) or an	original, first	and joint inventor
plural names are listed belo applicable) entitled: <b>OBJEC</b>	w) of the subject n	natter which is claimed ANALYSIS ENGIN	ed and for which a pat the specification of	ent is sought or which (check o	the invention	(Design, 1f
applicable) entitled. OBJEC		Chimbibio	b, mo opocinemia.	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	то,	
☐ was filed on		as Application Ser	ial No	, and was	amended on _	
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☐ was filed or	(if applicable	as International	Application (PCT)	No	, and	i was amended
I hereby state that I have re any amendment(s) referred application in accordance v United States Code § 119 of foreign application for pater	to above. I ack vith <i>Title 37, Code</i> f any foreign appl	cnowledge the duty of Federal Regulaticition(s) for patent tificate having a filin	to disclose informati ions, § I 56(a). I her or inventor's certificat	on which is me by claim forei te listed below a	aterial to the gn priority bea and have also	examination of nefits under <i>Title</i> identified below:
Number		COUNTRY	DAY/MONTH/Y	YEAR FILED	Priori	TY CLAIMED
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				:	Yes	□ No
APPLICATION N	UMBER	Fili	ING DATE	STATUS	(Patented, Pend	ing or Abandoned)
						**************************************
belief are believed to be tru- made are punishable by fine statements may jeopardize t	e; and further that e, or imprisonment the validity of the a DRNEY: I (We)	these statements wer , or both, under Section application or any path hereby appoint as m	on 1001 of Title 18 of ent issued thereon. by (our) attorneys, wi	vledge that will the United State th full powers	ful false staten es Code, and the of substitution	nents and the like that such willful fa and revocation,
Send correspondence to:	JAGTIANI & As 10379-B Demo Fairfax, Virgin	ocracy Lane	Telephone calls t	to: Ajay A. Jag (703) 591-2		
		X See following pages	s for additional joint invent	ors		<u> </u>
Full Name of First or Sole Inve BURFIELD, Evan G.	ntor		Citizenship United States			
Residence Address – Street 9852 Fairfax Square #22	5		Post Office Address S QED Innovation		nsburg Court	
City Fairfax			City Fairfax			
State or Country Virginia	Z <sub>IP</sub> 22031		State or Country Viriginia	Zip 220		
DATE 10/13/98		<u></u>	SIGNATURE SHE	LQ		

# DECLARATION. JR PATENT APPLICATION AND APPOINTMENT OF ATTORNEY

Full Name of Additional Joint Inve	entor	Citizenship
CHANG, Chia Chen		United States
Residence Address - Street	,	Post Office Address Street
804 Lawton Street		QED Innovations, 4013 Williamsburg Court
City		City
McLean		Fairfax
State or Country	Zip	State or Country Zip
Virginia	22101	Virginia 22032
DATE		SIGNATURE (7)
10/13/98		
Full Name of Additional Joint Inve	ntor	Citizenship

Full Name of Additional Joint Inventor DRISSEL, Mark		Citizenship United States	
Residence Address - Street 6314 Kiteline Court		Post Office Address Street QED Innovations, 4013 V	Williamsburg Court
City Columbia		City Fairfax	
State or Country Zip Maryland 21044		State or Country Zip Virginia 22032	
DATE 10/13/98		SIGNATURE Drissel	)

Full Name of Additional Joint Inv	entor	Citizenship United States	
Residence Address - Street  2629 Washington Blvd.		Post Office Address Street QED Innovations, 4013 Williamsburg Court	
City Arlington		City Fairfax	
State or Country Virginia	Zip 22201	State or Country Zip Virginia 22032	
DATE 10/13/98		SIGNATURE SIGNATURE	'e_

Full Name of Additional Joint Inventor GARRETT, Richard		Citizenship United States	
Residence Address - Street 9852 Fairfax Square #225		Post Office Address Street QED Innovations, 4013 Williamsburg Court	
City Fairfax		City Fairfax	
State or Country Zip Virginia 22031		State or Country Virginia	Zip 22032
DATE 10/13/98		SIGNATURE Richal	Havet

See following pages for additional joint inventors

# DECLARATION FOR PATENT APPLICATION AND APPOINTMENT OF ATTORNEY

	Page 2	
Full Name of Additional Joint Inventor GROAT, Robert	Citizenship United States	
Residence Address - Street 45862 Aberdeen Lane	Post Office Address Street QED Innovations, 4013 Williamsburg Co	ourt
City Valley Lee	City Fairfax	
State or Country Zip Maryland 20692	State or Country Zip Virginia 22	, 2032
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Full Name of Additional Joint Inventor KIPP, Neill	Citizenship United States	
Residence Address - Street 319 New Kent Road	Post Office Address Street QED Innovations, 4013 Williamsburg Co	ourt
City Blacksburg	City Fairfax	
State or Country Zip Virginia 24060	State or Country Zip Virginia 22	032
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==Full Name of Additional Joint Inventor =RAPP, Perry Russell	Citizenship United States	
Residence Address - Street 48278 Keel Drive	Post Office Address Street QED Innovations, 4013 Williamsburg Co	urt
**City **Lexington Park	City Fairfax	
State or Country Zip Maryland 20653	State or Country Zip Virginia 220	032
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Full Name of Additional Joint Inventor	Citizenship	
Residence Address – Street	Post Office Address Street	
City	City	
State or Country Zip	State or Country Zip	
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See following pages for additional joint inventors

10-15-1998 3:10PM FROM

## ATTORNEY DOCKET NO . NIST-XXXX-1 DECLARATION FOR PATENT APPLICATION AND APPOINTMENT OF ATTORNEY

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Full Name of Additional John Inventor GROAT, Robert		Catemaly United States	
Residence Address - Street 45862 Aberdean Lane		Fon Office Address Street QED Innovations, 4013 Williamsburg	Court
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Full Name of Additional John Inventor KIPP, Neill		Chizmship United States	
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Pull Name of Additional John Inventor RAPP, Perry Russell Residence Address - Speet		United States  Pon Office Address Street	Court
Full Name of Additional John Inventor RAPP, Perry Russell Residence Address - Street 48278 Keel Drive Cty Lexington Park State or Country 22	663	United States  Fon Office Address Street  QED Innovations, 4013 Williamsburg  City	Zip 22032
Pull Name of Additional John Inventor RAPP, Perry Russell Residence Address - Spect 45278 Keel Drive City Lexington Park State or Country 22		United States  Fon Office Address Street QED Innovations, 4013 Williamsburg City Fairfax  State or Country	Zip
Full Name of Additional John Inventor RAPP, Perry Russell  Residence Address - Street 48278 Keel Drive  Chy Laxington Park  State or Country Maryland  20  Date		United States  Fon Office Address Street QED Innovations, 4013 Williamsburg City Fairfax  State or Country Virginia	Zip
Full Name of Additional John Inventor RAPP, Perry Russell  Residence Address - Street 48278 Keel Drive  Chy Laxington Park  State or Country Maryland  20  Date		United States  Fon Office Address Street QED Innovations, 4013 Williamsburg City Fairfax  State or Country Virginia	Zip
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Pull Name of Additional John Inventor RAPP, Perry Russell  Residence Address - Speet 48278 Keel Drive  Cay Lexington Park  State or Country Maryland  25  Data 10/13/98  Pull Name of Additional John Inventor  Residence Address - Speet	653	United States  Pon Office Address Street QED Innovations, 4013 Williamsburg City Fairfax  State or Country Virginia  State or Country Virginia  Citizenship  Post Office Address Street	Zip

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ATTORNEY DUCKET NO. NIST-0006-1

# DECLARATION FOR PATENT APPLICATION AND APPOINTMENT OF ATTORNEY

Full Name of Additional John Surenser GROAT, Robert		Citizenship United States
Residence Address - Street 45862 Aberdeen Lane		Past Office Address Servet QED Innovations, 4013 Williamsburg Court
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State or Country Maryland	<i>21</i> 7 20692	Same or Country Zig Virginia 22032
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Cay Blacksburg		City Fairfux
State or Country Virginia	zu 24060	Stars or Country Zap Virginia 22032
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Pull Name of Additional Joint Inventor RAPP, Perry Russell		Citizenship United States
Residence Address - Street 48278 Keel Drivo		Post Office Address Street  QRD Imporations, 4013 Williamsburg Court
City Lexington Park		Cir) Fairfax
Sate or Country Maryland	Ζ↓ <sub>0</sub> 20653	State or Crustry Virginia Ziy Z1832
D41* 10/13/98		Signature of the Signat
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Full Name of Additional Jobs Inventor		Chiemskip
Residence Asidress - Street		Post Office Address Street
Co		Cuy
State or Country	Ziy	State or Country Zip
and the second s		SIGNATURE
Delz		

See following pages for additional jobs inventors.

### ASSIGNMENT

Absidit	(1E:11)
WHEREAS, Chia Chen Chang, whose post to as ASSIGNOR), has invented certain new and useful ANALYSIS ENGINE (hereinafter referred to as THE INV Letters Patent was filed October 15, 1998, Serial Number	ENTION) for which an application for United States
WHEREAS, QED Innovations, whose post Fairfax Virginia, (hereinafter referred to as ASSIGNEE interest in and to the same in the United States and thro	
NOW, THEREFORE, for good and valua acknowledged, we, ASSIGNOR, by these presents do entire right, title and interest in and to said invention. America, including any and all United States Lette continuation-in-part and reissue of said application; are invention throughout the world, including the right to a thereof and to claim priority pursuant to rights accordingly international Convention and all other available interright, title and interest in and to any and all patent importation, revalidation patents and inventor certificativespect of said invention.	n and application throughout the United States of rs Patent granted on any division, continuation, nd the entire right, title and interest in and to said pply for patents and inventor certificates in respect corded ASSIGNOR under the terms of the Paris mational conventions and treaties; and the entire is, patents of addition, utility models, patents of
ALSO, ASSIGNOR hereby agrees to execute connection with the filing, prosecution and mainter application(s) or inventor certificate(s) in the United Stincluding additional documents that may be required invention, all without further consideration. ASSIGNOR ASSIGNEE'S expense, to identify and communicate to information concerning the invention that are within further assurances and testimony on behalf of ASSIGNOR respect of the prosecution, maintenance and defense within the terms of this instrument. ASSIGNOR'S of ASSIGNOR'S heirs, executors, administrators and other leading to the prosecution of	States and in foreign countries for said invention, to affirm the rights of ASSIGNEE in and to said a also agrees, without further consideration and at ASSIGNEE at ASSIGNEE's request documents and ASSIGNOR's possession or control, and to provide EE that lawfully may be required of ASSIGNOR in of any patent application or patent encompassed bligations under this instrument shall extend to
any and all United States Letters Patent referred to above in and to the same, for ASSIGNEE'S sole use and behal representatives and successors, to the full end of the terrifully and entirely as the same would have been held by made.  Inventor: Chia Chen Chang Address: 804 Lawton Street McLean, Virginia 22101	if; and for the use and behalf of ASSIGNEE'S legal in for which such Letters Patent may be granted, as
State of, City/County of,	
Before me personally appeared and saidacknowledges this instrument to be his (her) free act and,	d deed this day of
	Notary Public
My commission expires:	

ASSIGNMENT	
WHEREAS, Matthew Eichler, whose post office addre as ASSIGNOR), has invented certain new and useful improver ANALYSIS ENGINE (hereinafter referred to as THE INVENTION) for Letters Patent was filed October 15, 1998, Serial Number:  WHEREAS, QED Innovations, whose post office as	nents in an OBJECT-BASED NUMERIC- or which an application for United States
Fairfax Virginia, (hereinafter referred to as ASSIGNEE), is desired interest in and to the same in the United States and throughout the	ous of acquiring the entire right, title and
NOW, THEREFORE, for good and valuable consi acknowledged, we, ASSIGNOR, by these presents do sell, assig entire right, title and interest in and to said invention and appl America, including any and all United States Letters Patent continuation-in-part and reissue of said application; and the enti invention throughout the world, including the right to apply for pathereof and to claim priority pursuant to rights accorded As International Convention and all other available international cright, title and interest in and to any and all patents, patents importation, revalidation patents and inventor certificates which respect of said invention.	n and transfer until said ASSIGNEE, the lication throughout the United States of granted on any division, continuation, are right, title and interest in and to said attents and inventor certificates in respect assignor under the terms of the Paris conventions and treaties; and the entire of addition, utility models, patents of
ALSO, ASSIGNOR hereby agrees to execute any documentation with the filing, prosecution and maintenance of application(s) or inventor certificate(s) in the United States and including additional documents that may be required to affirm invention, all without further consideration. ASSIGNOR also agree ASSIGNEE's expense, to identify and communicate to ASSIGNOE information concerning the invention that are within ASSIGNOR's further assurances and testimony on behalf of ASSIGNEE that law respect of the prosecution, maintenance and defense of any part within the terms of this instrument. ASSIGNOR'S obligations ASSIGNOR'S heirs, executors, administrators and other legal representations.	said application or any other patent in foreign countries for said invention, the rights of ASSIGNEE in and to said tes, without further consideration and at at ASSIGNEE'S request documents and so possession or control, and to provide wfully may be required of ASSIGNOR in tent application or patent encompassed under this instrument shall extend to
ASSIGNOR hereby authorizes and requests the Commission and all United States Letters Patent referred to above to ASSIGN and to the same, for ASSIGNEE's sole use and behalf; and for representatives and successors, to the full end of the term for which fully and entirely as the same would have been held by ASSIGNOR made.	SNEE of the entire right, title and interest the use and behalf of ASSIGNEE'S legal h such Letters Patent may be granted, as
nade.	Marie 55
Inventor: Matthew Eichler	Maddelica
Address: 2629 Washington Blvd.,	Signature
Arlington, Virginia 22201	Date: /0 /15 / 9 8  SSN.: /09- 50- 5/9    Notarization preferred but not required
State of,	,
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D. C	
Before me personally appeared and said acknowledges this instrument to be his (her) free act and deed this	, and
ucknowledges this tristrament to be his (her) free act and deed this	day of
	Notary Public

ASSIGNMENT	
WHEREAS, Mark Drissel, whose post office address ASSIGNOR), has invented certain new and useful improve ANALYSIS ENGINE (hereinafter referred to as THE INVENTION) Letters Patent was filed October 15, 1998, Serial Number:	ements in an OBJECT-BASED NUMERIC ) for which an application for United States
WHEREAS, QED Innovations, whose post office Fairfax Virginia, (hereinafter referred to as ASSIGNEE), is desinterest in and to the same in the United States and throughout	sirous of acquiring the entire right, title and
NOW, THEREFORE, for good and valuable con acknowledged, we, ASSIGNOR, by these presents do sell, assentire right, title and interest in and to said invention and an America, including any and all United States Letters Pater continuation-in-part and reissue of said application; and the einvention throughout the world, including the right to apply for thereof and to claim priority pursuant to rights accorded International Convention and all other available internationaright, title and interest in and to any and all patents, patent importation, revalidation patents and inventor certificates which respect of said invention.	sign and transfer until said ASSIGNEE, the oplication throughout the United States of ant granted on any division, continuation, ntire right, title and interest in and to said patents and inventor certificates in respect ASSIGNOR under the terms of the Paris I conventions and treaties; and the entire ats of addition, utility models, patents of
ALSO, ASSIGNOR hereby agrees to execute any do connection with the filing, prosecution and maintenance of application(s) or inventor certificate(s) in the United States are including additional documents that may be required to affir invention, all without further consideration. ASSIGNOR also aga ASSIGNEE's expense, to identify and communicate to ASSIGNO information concerning the invention that are within ASSIGNO further assurances and testimony on behalf of ASSIGNEE that respect of the prosecution, maintenance and defense of any within the terms of this instrument. ASSIGNOR's obligation ASSIGNOR's heirs, executors, administrators and other legal representations.	of said application or any other patent and in foreign countries for said invention, in the rights of ASSIGNEE in and to said grees, without further consideration and at IEE at ASSIGNEE's request documents and DR's possession or control, and to provide lawfully may be required of ASSIGNOR in patent application or patent encompassed as under this instrument shall extend to
ASSIGNOR hereby authorizes and requests the Commis any and all United States Letters Patent referred to above to AS in and to the same, for ASSIGNEE'S sole use and behalf; and frepresentatives and successors, to the full end of the term for who fully and entirely as the same would have been held by ASSIGNEE'S.	SIGNEE of the entire right, title and interest for the use and behalf of ASSIGNEE'S legal nich such Letters Patent may be granted, as
made.	$\mathcal{M}$
Inventor: Mark Drissel Address: 6314 Kiteline Court Columbia, Maryland 21044	Signature Date: 10 /15/98 SSN.: Notarization preferred but not required
State of,	
City/County of,	
Before me personally appeared and said	, and
acknowledges this instrument to be his (her) free act and deed to	

Notary Public

ASSIGNMENT	
WHEREAS, Richard Garrett, whose post office address as Assignor), has invented certain new and useful improve ANALYSIS ENGINE (hereinafter referred to as THE INVENTION) the Letters Patent was filed October 15, 1998, Serial Number:	ments in an OBJECT-BASED NUMERIC- for which an application for United States
WHEREAS, QED Innovations, whose post office Fairfax Virginia, (hereinafter referred to as ASSIGNEE), is desir interest in and to the same in the United States and throughout the	ous of acquiring the entire right, title and
NOW, THEREFORE, for good and valuable consacknowledged, we, ASSIGNOR, by these presents do sell, assigntire right, title and interest in and to said invention and approximation, including any and all United States Letters Patent continuation-in-part and reissue of said application; and the entinvention throughout the world, including the right to apply for thereof and to claim priority pursuant to rights accorded A International Convention and all other available international right, title and interest in and to any and all patents, patents importation, revalidation patents and inventor certificates which respect of said invention.	gn and transfer until said ASSIGNEE, the oblication throughout the United States of granted on any division, continuation, tire right, title and interest in and to said patents and inventor certificates in respect assignment under the terms of the Paris conventions and treaties; and the entire of addition, utility models, patents of
ALSO, ASSIGNOR hereby agrees to execute any doct connection with the filing, prosecution and maintenance of application(s) or inventor certificate(s) in the United States and including additional documents that may be required to affirm invention, all without further consideration. ASSIGNOR also agr ASSIGNEE'S expense, to identify and communicate to ASSIGNOR information concerning the invention that are within ASSIGNOR further assurances and testimony on behalf of ASSIGNEE that la respect of the prosecution, maintenance and defense of any pawithin the terms of this instrument. ASSIGNOR'S obligations ASSIGNOR'S heirs, executors, administrators and other legal representations.	said application or any other patent in foreign countries for said invention, in the rights of ASSIGNEE in and to said ees, without further consideration and at E at ASSIGNEE's request documents and the spossession or control, and to provide wfully may be required of ASSIGNOR in atent application or patent encompassed a under this instrument shall extend to
ASSIGNOR hereby authorizes and requests the Commission any and all United States Letters Patent referred to above to ASSI in and to the same, for ASSIGNEE'S sole use and behalf; and for representatives and successors, to the full end of the term for which fully and entirely as the same would have been held by ASSIGNO made.	GNEE of the entire right, title and interest the use and behalf of ASSIGNEE'S legal ch such Letters Patent may be granted, as
Inventor: Richard Garrett Address: 9852 Fairfax Square #225 Fairfax, Virginia 22031	Signature Date: OCT. 15, 1998 SSN.: 330-50-9370 Notarization preferred but not required
State of, City/County of,	
Before me personally appeared and said acknowledges this instrument to be his (her) free act and deed this	s, and day of
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Notary Public

ASSIGNMENT	
WHEREAS, Robert Groat, whose post office address ASSIGNOR), has invented certain new and useful improved ANALYSIS ENGINE (hereinafter referred to as THE INVENTION) Letters Patent was filed October 15, 1998, Serial Number:	nents in an OBJECT-BASED NUMERIC- for which an application for United States
WHEREAS, QED Innovations, whose post office Fairfax Virginia, (hereinafter referred to as ASSIGNEE), is designiterest in and to the same in the United States and throughout the	rous of acquiring the entire right, title and
NOW, THEREFORE, for good and valuable consacknowledged, we, ASSIGNOR, by these presents do sell, assisentire right, title and interest in and to said invention and application, including any and all United States Letters Patent continuation-in-part and reissue of said application; and the en invention throughout the world, including the right to apply for thereof and to claim priority pursuant to rights accorded Anternational Convention and all other available international right, title and interest in and to any and all patents, patent importation, revalidation patents and inventor certificates which respect of said invention.	gn and transfer until said ASSIGNEE, the plication throughout the United States of t granted on any division, continuation, tire right, title and interest in and to said patents and inventor certificates in respect ASSIGNOR under the terms of the Paris conventions and treaties; and the entire its of addition, utility models, patents of
ALSO, ASSIGNOR hereby agrees to execute any doc connection with the filing, prosecution and maintenance o application(s) or inventor certificate(s) in the United States an including additional documents that may be required to affirm invention, all without further consideration. ASSIGNOR also ag ASSIGNEE'S expense, to identify and communicate to ASSIGNE information concerning the invention that are within ASSIGNOR further assurances and testimony on behalf of ASSIGNEE that he respect of the prosecution, maintenance and defense of any p within the terms of this instrument. ASSIGNOR'S obligation ASSIGNOR'S heirs, executors, administrators and other legal representations.	f said application or any other patent d in foreign countries for said invention, in the rights of ASSIGNEE in and to said rees, without further consideration and at EE at ASSIGNEE'S request documents and R'S possession or control, and to provide awfully may be required of ASSIGNOR in patent application or patent encompassed is under this instrument shall extend to
ASSIGNOR hereby authorizes and requests the Commiss any and all United States Letters Patent referred to above to ASS in and to the same, for ASSIGNEE'S sole use and behalf; and for representatives and successors, to the full end of the term for wh fully and entirely as the same would have been held by ASSIGN made.	SIGNEE of the entire right, title and interest or the use and behalf of ASSIGNEE'S legal ich such Letters Patent may be granted, as
Inventor: Robert Groat Address: 45862 Aberdeen Lane Valley Lee, Maryland 20692	Signature Date: 6/15/78 SSN.: 2,5808492 Notarization preferred but not required
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Before me personally appeared and saidacknowledges this instrument to be his (her) free act and deed the	

Notary Public

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### **ASSIGNMENT**

WHEREAS, Neill Kipp, whose post office addresses appear below (hereinefter referred to as ASSIGNOR), has invented certain new and useful improvements in an Object-Based Numeric Analysis Engine (hereinafter referred to as The Invention) for which an application for United States Letters Patent was filed October 15, 1998, Serial Number:

WHEREAS, QED Innovations, whose post office address is 4013 Williamshurg Court, Fairfux Virginia, (hereinafter referred to as ASSIGNEE), is desirous of acquiring the entire right, thie and interest in and to the same in the United States and throughout the world;

NOW, THEREFORE, for good and valuable consideration, receipt of which is hereby acknowledged, we, ASSIGNOR, by these presents do sell, assign and transfer until said ASSIGNOR, the entire right, title and interest in and to said invention and application throughout the United States of America, including any and all United States Letters Patent granted on any division, continuation, continuation-in-part and reissue of said application; and the entire right, title and interest in and to said invention throughout the world, including the right to apply for putents and inventor certificates in respect thereof and to claim priority pursuant to rights accorded ASSIGNOR under the terms of the Paris international Convention and all other available international conventions and treaties; and the entire right, title and interest in and to any and all patents, patents of addition, utility models, patents of importation, revalidation patents and inventor certificates which may be granted throughout the world in respect of said invention.

ALSO, ASSIGNOR hereby agrees to execute any documents that legally may be required in connection with the filling, prosecution and maintenance of said application or any other patent application(s) or invantor certificate(s) in the United States and in foreign countries for said invention, including additional documents that may be required to affirm the rights of ASSIGNEE in and to said invention, all without further consideration. ASSIGNOR also agrees, without further consideration and at ASSIGNEE's expense, to identify and communicate to ASSIGNEE at ASSIGNEE's request documents and information concerning the invention that are within ASSIGNOR's possession or control, and to provide further assurances and testimony on behalf of ASSIGNEE that lawfully may be required of ASSIGNOR in respect of the prosecution, maintenance and defense of any patent application or patent encompassed within the terms of this instrument. ASSIGNOR's obligations under this instrument shall extend to ASSIGNOR's helrs, executors, administrators and other legal representatives.

ASSIGNOR hereby authorizes and requests the Commissioner of Patents and Trademarks to issue any and all United States Letters Patent referred to above to ASSIGNER of the entire right, title and interest in and to the same, for ASSIGNER'S gole use and behalf, and for the use and behalf of ASSIGNER'S legal representatives and successors, to the full end of the term for which such Letters Patent may be granted, as fully and entirely as the same would have been field by ASSIGNOR had this assignment and sale not bear made.

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Inventor: Neili Kipp	X/VIII/Page
Address: 319 New Kent Road	Signature
Blacksburg, Virginia 24060	Date: 10//5/99 8
•	SSN: 260-06-0637
	Notarization preferred but not required
State of City/County of	
Before me personally appeared and said	, and
acknowledges this instrument to he his (her) free act and de	sed this day o
	Notary Public
My commission expires:	

3500

**ASSIGNMENT** 

WIJERBAS, Perry Russell Rapp, whose post office addresses appear below (hereinafter referred to as ASSIGNOR), has invented certain new and useful improvements in an OBJECT-BASED NUMERIC-ANALYSIS ENGINE (hereinafter referred to as THE INVENTION) for which an application for United States Letters Patent was filed October 15, 1998, Serial Number:\_\_\_\_\_\_;

WHEREAS, QED Innovations, whose post office address is 4013 Williamsburg Court, Fairfax Virginia, (hereinafter referred to as ASSIGNAE), is desirous of acquiring the entire right, title and interest in and to the same in the United States and throughout the world;

NOW. THEREFORE, for good and valuable consideration, receipt of which is hereby acknowledged, we, ASSIGNOR, by these presents do sell, assign and transfer until said ASSIGNEE, the entire right, title and interest in and to said invention and application throughout the United States of America, including any and all United States Letters Patent granted on any division, continuation, continuation-in-part and reissue of said application; and the entire right, title and interest in and to said invention fluoughout the world, including the right to apply for patents and inventor certificates in respect thereof and to claim priority pursuant to rights accorded ASSIGNOR under the terms of the Paris International Convention and all other available international conventions and treaties; and the entire right, title and interest in and to any and all patents, patents of addition, utility models, patents of importation, revalidation patents and invantor certificates which may be granted throughout the world in respect of said invention.

ALSO, ASSIGNOR hereby agrees to execute any documents that legally may be required in connection with the filling, prosecution and maintenance of said application or any other patent application(s) or inventor certificate(s) in the United States and in foreign countries for said invention, including additional documents that may be required to affirm the rights of ASSIGNEE in and to said invention, all without further consideration. ASSIGNOR also agrees, without further consideration and at ASSIGNEE's expense, to identify and communicate to ASSIGNEE at ASSIGNEE's request documents and information concerning the invention that are within ASSIGNOE at ASSIGNEE required of ASSIGNOE in respect of the prosecution, maintenance and defense of any patent application or patent encompassed within the terms of this instrument. ASSIGNOR'S obligations under this instrument shall extend to ASSIGNOR'S heirs, executors, administrators and other legal representatives.

ASSIGNOR hereby authorizes and requests the Commissioner of Patents and Trademarks to Issue any and all United States Letters Patent referred to above to ASSIGNEE of the entire right, title and interest in and to the same, for ASSIGNEE'S sole use and behalf, and for the use and behalf of ASSIGNEE'S legal representatives and successors, to the full end of the term for which such Letters Patent may be granted, as fully and entirely as the same would have been held by ASSIGNOR had this assignment and sale not been made.

inventor:	Perry Russell Rapp		_
Address:	48278 Keel Drive	Signature	
	Lexington Park, Maryland 20653	Date: 0cx 15 1998	_
		SSN.:	_
		Notarization preferred but not require	¢
State of _			
State of _ City/Com	nty of		
Before m	e personally appeared and said	ur	d
acknowle	ages this instrument to he his (her) free uct and deed this	day	۲,
	Market Ma		
		Notary Public	
34	Julan avatas:	•	

ASSIGNMENT	
WHEREAS, Evan G. Burfield, whose post office addr to as ASSIGNOR), has invented certain new and useful improver ANALYSIS ENGINE (hereinafter referred to as THE INVENTION) fo Letters Patent was filed October 15, 1998, Serial Number:	nents in an OBJECT-BASED NUMERIC- r which an application for United States
WHEREAS, QED Innovations, whose post office a Fairfax Virginia, (hereinafter referred to as ASSIGNEE), is desiro interest in and to the same in the United States and throughout the	us of acquiring the entire right, title and
NOW, THEREFORE, for good and valuable consideration acknowledged, we, ASSIGNOR, by these presents do sell, assign entire right, title and interest in and to said invention and application; including any and all United States Letters Patent continuation-in-part and reissue of said application; and the entire invention throughout the world, including the right to apply for pathereof and to claim priority pursuant to rights accorded AS International Convention and all other available international cright, title and interest in and to any and all patents, patents importation, revalidation patents and inventor certificates which respect of said invention.	and transfer until said ASSIGNEE, the cation throughout the United States of granted on any division, continuation, re right, title and interest in and to said atents and inventor certificates in respect SIGNOR under the terms of the Paris conventions and treaties; and the entire of addition, utility models, patents of
ALSO, ASSIGNOR hereby agrees to execute any document connection with the filing, prosecution and maintenance of application(s) or inventor certificate(s) in the United States and including additional documents that may be required to affirm invention, all without further consideration. ASSIGNOR also agree ASSIGNEE's expense, to identify and communicate to ASSIGNOE's information concerning the invention that are within ASSIGNOR's further assurances and testimony on behalf of ASSIGNEE that law respect of the prosecution, maintenance and defense of any part within the terms of this instrument. ASSIGNOR'S obligations ASSIGNOR'S heirs, executors, administrators and other legal representations.	said application or any other patent in foreign countries for said invention, the rights of ASSIGNEE in and to said es, without further consideration and at at ASSIGNEE'S request documents and s possession or control, and to provide viully may be required of ASSIGNOR in tent application or patent encompassed under this instrument shall extend to
ASSIGNOR hereby authorizes and requests the Commission and all United States Letters Patent referred to above to ASSIG in and to the same, for ASSIGNEE'S sole use and behalf; and for representatives and successors, to the full end of the term for which fully and entirely as the same would have been held by ASSIGNO and the same would h	THEE of the entire right, title and interest the use and behalf of ASSIGNEE'S legal h such Letters Patent may be granted, as R had this assignment and sale not been
Inventor: Evan G. Burfield Address: 9852 Fairfax Square #225 Fairfax, Virginia 22031	Signature Date: 10 15 98 SSN.: 223-23-9509 Notarization preferred but not required
State of, City/County of,	
City/County of	
Before me personally appeared and saidacknowledges this instrument to be his (her) free act and deed this	, and cday of
	Notary Public

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Applicanton Facility	BURFIELD, et al.	Douber	₹ QFD1-0001-1
Scholar Paratitional		1 supm	en
the looked	October 15, 1998	An Line	1
# Est	Charter Baselin ampire		

A FREIED STATE MENT (DECEARATION) BY A SMALL BY SINESS CO CLAMMOGRAFIE ENTITY STATES UNDER 37 C.F.R. §§ 1.9(F) AND	
hereby declare that but  the owner of the strail promess concern identified below  in official of the small bisings's concern empowered to act on behalf of the concern identifies	ed below
Same of Concern OFB Innocations	
Address 4013 Williamsburg Court, Farfax, V v. 22032	
I hereby declare that the above identified Stall business concern qualifies as a small business concern 13, and reproduced in 3.7 CFR 1.9 dr. for Fitposes of Buying reduced fees under section 41 ar and 1 code in that the number of employees of the concern, including those of its affiliates, does not exceed of this statement. (1) the number of employees to the average over the previous fiscal year of the concern a full-time pair time or temporary basis during each of the pay periods of the fiscal year and (2) of other when either directly or indirectly one concern controls of has the power to control the other, or a or has the power to control both.	500 persons — For purposes and of the persons employed concerns are affiliates of each
I hereby declare that nights until gonthar of law have been conveyed to and remain with the small huse with regard to the man't described in.  If the specification filed nerewith with the interest based anove.  The patent application filed nerewith with the interest based.  The patent application application adentified above.  The patent number relationship above.  If the rights held by the above identified small husiness concern are not exclusive, each individual, or nights to the invention must the separate ventied valuations avering to their status as small entities, and held by any person, other than the invention, who would not quality as a small husiness concern qualet the invention or by after concern vide would not quality as a small husiness concern qualet and the invention or by after concern vide would not quality as a small husiness concern qualet and the invention or by after concern vide or organization having any rights in the invention is lead to such person concern or organization.	oneem or organization having ino rights to the invention are is a "CFR 1 Size if that person is CFR 1 Size, or a nonprofit
Facilities Prison Control of the Con	☐ Lehydud ☐Small Business) oncern ☐ Nonprefit Organization
I acknowledge the duly to file, in this application or patent, nonlication of any change in status to small entity status prior to paying or at the time of paying, the earliest of the usure tee or any mains which status as a small entity is no longer appropriate (3° CFR 125th).	saling in loss of entitlement to remove fee due after the date on ments made on information and a validad table statements and the

I hereby deshife that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be mie, and further that these statements were made with the knowledge that willful take statements and the like so made are punishable by fine, or improviment, or both, under section 1001 or 1/tle fix or the United States Code, and that such willful take statements may reopardize the validity of the application, any patent issuing thereon, or any patent to which the valid of statements may reopardize the validity of the application.

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